

**Title** Suppressed Leaf Senescence in Chrysanthemum Transformed with a Mutated Ethylene Receptor Gene *mDG-ERS1(etr1-4)*

**Author** Shigeru Satoh, Masanobu Watanabe, Keiko Chisaka and Takako Narumi

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#### Abstract

Previously, Narumi et al. (2005) generated chrysanthemum plants transformed with a mutated ethylene receptor gene (*mDG-ERS1(etr1-4)*), and showed that *in vitro* plantlets of the transformants grown aseptically in a small plastic container had a reduced sensitivity to ethylene resulting in reduced leaf yellowing after exposure to exogenous ethylene. In the present study we evaluated ethylene sensitivity of the transformants using soil-grown mature plants. When the shoots detached from soil-grown plants were treated with exogenous ethylene under continuous light, leaf yellowing (senescence) was delayed in the transformants as compared with the non-transformed plants. Furthermore, when the detached shoots were kept in darkness without ethylene treatment, the transformants showed reduced senescence as compared with those of the non-transformed plants. These results demonstrated that the mutated ethylene receptor gene *mDG-ERS1(etr1-4)* could confer reduced sensitivity to ethylene in the leaves of mature chrysanthemum plants. This gene may be useful to generate transgenic *Compositae* vegetables with leaves green for a longer time and thus having a longer shelf life.

<http://www.springerlink.com/content/k2208181m15182k2/fulltext.pdf>